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ABSTRACT

This booklet is one of a set of five booklets which comprise the basic curriculum for "Mathematics Laboratories for Disadvantaged Students," a nationally validated Title III ESEA project. This publication provides evaluation materials and student materials related to fractions. Topics included in this booklet are meanings of fractions, renaming fractions, multiplication, division, addition, subtraction, and sizes of fractions. The project was designed for middle school students (grades 5-8). (RH)

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Laboratory Mathematics

Curriculum Booklet 3 **Fractions**

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SE 082 694

LABORATORY MATHEMATICS

Curriculum Booklet III

Fractions

Developed by:

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A Nationally Validated Project
funded under
Title III, Elementary and Secondary Education Act
1972-77

PREFACE

This booklet is one of a set of five booklets which comprises the basic curriculum for "Mathematics Laboratories for Disadvantaged Students," a nationally validated Title III ESEA project. Also included in the series is a teacher training booklet. The entire series of booklets was compiled by Mrs. Sandra Rogers who has worked in the mathematics laboratories project for three and one-half years. Mr. Dan Sandel, mathematics consultant for the South Carolina State Department of Education, served in an advisory capacity to Mrs. Rogers during the writing and compiling activity.

Teachers who plan to use the mathematics laboratory methods, as developed in this project, are cautioned to be aware that no one set of curriculum materials can be used with all students. The materials developed in this project should serve as the basic core of the laboratory curriculum with each teacher using his own initiative to adapt the materials to the needs of his students.

Materials and methodology alone will not produce a successful mathematics laboratory program. For success to be realized, the mathematics laboratory must be staffed with a teacher and an aide who are dedicated and enthusiastic and who are compassionate toward the type of students served in this project.

Dr. Marvin Woodson, Jr.
Assistant Superintendent and
Project Director

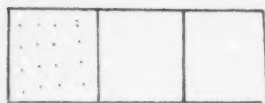
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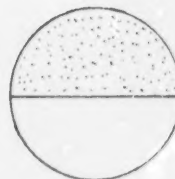
FRACTIONS - PRETEST A

Express as a fraction the parts marked:

1.



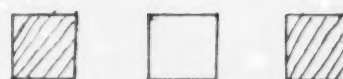
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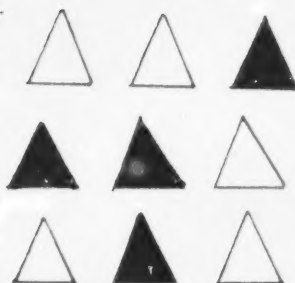
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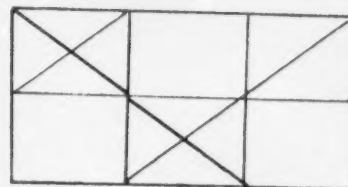
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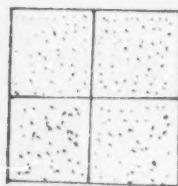
5.



6.



7.



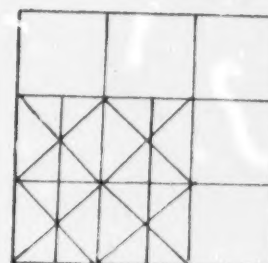
8.



9.



10.



Do pages 2 and 3



Express as a fraction:

1. 3 of 5 equal parts _____.

2. 3 of 8 girls are blondes _____.

3. 5 of 6 coke bottles are empty _____.

4. 5 of 7 chickens are white _____.

5. 7 of 10 equal parts _____.

6. 3 of the 4 balls are missing _____.

7. 2 of the 5 chairs need repair _____.

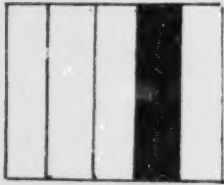
8. 9 of the 12 oranges are juicy _____.

9. 1 of 2 books have pictures _____.

10. All 10 pieces of the puzzle are missing _____.

Copy and complete the statements.

1.



$\frac{1}{5}$ parts colored
 $\frac{1}{5}$ parts total = $\frac{1}{5}$

2.



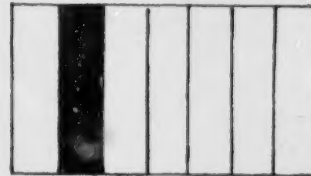
$\frac{2}{5}$ parts colored
 $\frac{2}{5}$ parts total = $\frac{2}{5}$

3.



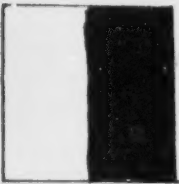
$\frac{3}{10}$ parts colored = $\frac{3}{10}$
 $\frac{3}{10}$ parts total

4.



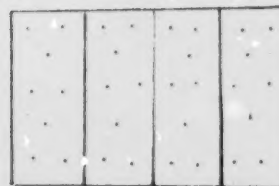
$\frac{1}{5}$ of the total is colored.

5.



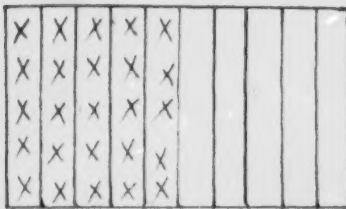
$\frac{1}{2}$ of the total is colored.

6.



$\frac{24}{40}$ of the total is dotted.

7.



$\frac{25}{50}$ of the total have x's.

8.



$\frac{6}{10}$ of the total has lines.

9.



$\frac{1}{2}$ is colored.



$\frac{2}{4}$ is dotted.

10.

How many designs have the same fractional value as $\frac{1}{2}$? $\frac{1}{2}$

FRACTIONS - PRETEST B

A. Rename these fractions:

1. $\frac{6}{8} = \frac{\quad}{4}$

6. $\frac{4}{5} = \frac{\quad}{20}$

2. $\frac{2}{5} = \frac{\quad}{15}$

7. $\frac{7}{14} = \frac{\quad}{2}$

3. $\frac{1}{2} = \frac{\quad}{20}$

8. $\frac{3}{5} = \frac{\quad}{5}$

4. $\frac{6}{1} = \frac{\quad}{3}$

9. $\frac{3}{3} = \frac{\quad}{1}$

5. $\frac{6}{11} = \frac{\quad}{22}$

10. $\frac{6}{18} = \frac{\quad}{3}$

Do pages 5 and 6.



B. Change these fractions:

1. $\frac{13}{7} = \frac{\quad}{\quad}$

6. $8 \frac{1}{4} = \frac{\quad}{\quad}$

2. $\frac{47}{5} = \frac{\quad}{\quad}$

7. $2 \frac{2}{3} = \frac{\quad}{\quad}$

3. $\frac{32}{3} = \frac{\quad}{\quad}$

8. $6 \frac{7}{8} = \frac{\quad}{\quad}$

4. $\frac{15}{8} = \frac{\quad}{\quad}$

9. $3 \frac{1}{4} = \frac{\quad}{\quad}$

5. $\frac{22}{6} = \frac{\quad}{\quad}$

10. $9 \frac{2}{7} = \frac{\quad}{\quad}$

Do pages 7 and 8.



Equal ratios

1. In the ratio $\frac{6}{4}$, what is the largest number both 6 and 4 can be divided by? _____

$$\frac{6}{4} \div \frac{\square}{\square} = \frac{3}{2}$$

2. In the ratio $\frac{3}{2}$, what is the only number both 3 and 2 can be divided by? _____

$\frac{3}{2}$ is a basic ratio. this is because 1 is the only number by which both 3 and 2 can be divided.

3. Circle each of the basic ratios.

$\frac{3}{9}$

$\frac{4}{5}$

$\frac{12}{24}$

$\frac{7}{21}$

$\frac{3}{2}$

$\frac{25}{15}$

$\frac{7}{5}$

$\frac{8}{11}$

4. Complete this chart.

Sometimes the basic ratio is given. Then multiply by the numbers at the top to get equal ratios. Sometimes the basic ratio is not given. Then you will have to divide by the number at the top to find it.

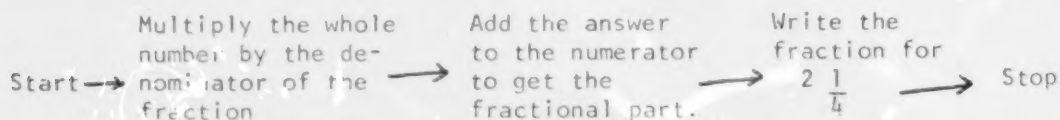
Basic Ratio	2	3	4	5	6	8	10	12	15	20
$\frac{2}{3}$										
$\frac{5}{2}$										
$\frac{6}{1}$										
$\frac{4}{5}$										
$\frac{10}{3}$										
	$\frac{8}{6}$									
		$\frac{18}{33}$								
				$\frac{15}{40}$						
							$\frac{90}{20}$			

Reduce each of these:

- | | |
|--------------------|----------------------|
| 1. $8/10 =$ ____ | 26. $10/18 =$ ____ |
| 2. $3/9 =$ ____ | 27. $10/45 =$ ____ |
| 3. $18/21 =$ ____ | 28. $3/3 =$ ____ |
| 4. $10/16 =$ ____ | 29. $12/27 =$ ____ |
| 5. $15/35 =$ ____ | 30. $2/8 =$ ____ |
| 6. $14/16 =$ ____ | 31. $12/32 =$ ____ |
| 7. $15/21 =$ ____ | 32. $8/14 =$ ____ |
| 8. $16/20 =$ ____ | 33. $6/12 =$ ____ |
| 9. $5/10 =$ ____ | 34. $20/35 =$ ____ |
| 10. $20/32 =$ ____ | 35. $15/18 =$ ____ |
| 11. $6/8 =$ ____ | 36. $12/16 =$ ____ |
| 12. $20/24 =$ ____ | 37. $3/21 =$ ____ |
| 13. $12/14 =$ ____ | 38. $4/6 =$ ____ |
| 14. $2/6 =$ ____ | 39. $4/28 =$ ____ |
| 15. $4/14 =$ ____ | 40. $15/25 =$ ____ |
| 16. $6/16 =$ ____ | 41. $10/10 =$ ____ |
| 17. $4/16 =$ ____ | 42. $9/21 =$ ____ |
| 18. $2/16 =$ ____ | 43. $9/27 =$ ____ |
| 19. $30/50 =$ ____ | 44. $3/27 =$ ____ |
| 20. $2/10 =$ ____ | 45. $10/14 =$ ____ |
| 21. $2/18 =$ ____ | 46. $100/100 =$ ____ |
| 22. $21/24 =$ ____ | 47. $24/54 =$ ____ |
| 23. $8/36 =$ ____ | 48. $8/12 =$ ____ |
| 24. $6/36 =$ ____ | 49. $3/24 =$ ____ |
| 25. $3/18 =$ ____ | 50. $3/15 =$ ____ |

Changing fractions to mixed numbers and mixed numbers to fractions.

This flow chart tells how to change a mixed number to a fraction.



$2 \frac{1}{4}$

$2 \times 4 = 8$

$8 + 1 = 9$

$9/4$

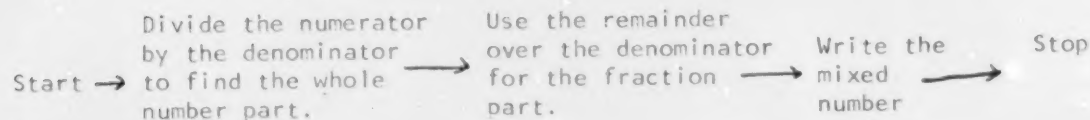
Use the flow chart to change these mixed numbers to fractions.

1. $3 \frac{1}{4} = \underline{\hspace{2cm}}$ 2. $5 \frac{1}{6} = \underline{\hspace{2cm}}$ 3. $2 \frac{3}{4} = \underline{\hspace{2cm}}$ 4. $6 \frac{7}{8} = \underline{\hspace{2cm}}$

5. $4 \frac{3}{8} = \underline{\hspace{2cm}}$ 6. $1 \frac{2}{3} = \underline{\hspace{2cm}}$ 7. $3 \frac{1}{5} = \underline{\hspace{2cm}}$ 8. $9 \frac{4}{5} = \underline{\hspace{2cm}}$

9. $10 \frac{1}{2} = \underline{\hspace{2cm}}$ 10. $8 \frac{1}{4} = \underline{\hspace{2cm}}$ 11. $5 \frac{3}{5} = \underline{\hspace{2cm}}$ 12. $11 \frac{7}{10} = \underline{\hspace{2cm}}$

This flow chart tells how to change a fraction to a mixed number.



$9/4$

$$\begin{array}{r} 2 \text{ R}1 \\ 4 \overline{) 9} \end{array}$$

$1/4$

$2 \frac{1}{4}$

13. $22/6 = \underline{\hspace{2cm}}$

14. $15/8 = \underline{\hspace{2cm}}$

15. $13/2 = \underline{\hspace{2cm}}$

16. $47/6 = \underline{\hspace{2cm}}$

17. $32/3 = \underline{\hspace{2cm}}$

18. $7/4 = \underline{\hspace{2cm}}$

19. $19/4 = \underline{\hspace{2cm}}$

20. $8/5 = \underline{\hspace{2cm}}$

21. $10/3 = \underline{\hspace{2cm}}$

22. $27/8 = \underline{\hspace{2cm}}$

23. $53/10 = \underline{\hspace{2cm}}$

24. $83/12 = \underline{\hspace{2cm}}$

Change to whole number or mixed number.

- | | |
|--------------------|--------------------|
| 1. $7/3 =$ ____ | 14. $23/15 =$ ____ |
| 2. $5/2 =$ ____ | 15. $43/2 =$ ____ |
| 3. $11/4 =$ ____ | 16. $42/3 =$ ____ |
| 4. $17/12 =$ ____ | 17. $3/2 =$ ____ |
| 5. $11/8 =$ ____ | 18. $16/3 =$ ____ |
| 6. $18/9 =$ ____ | 19. $11/9 =$ ____ |
| 7. $19/6 =$ ____ | 20. $41/10 =$ ____ |
| 8. $28/14 =$ ____ | 21. $13/5 =$ ____ |
| 9. $8/5 =$ ____ | 22. $15/4 =$ ____ |
| 10. $21/7 =$ ____ | 23. $45/7 =$ ____ |
| 11. $34/7 =$ ____ | 24. $15/7 =$ ____ |
| 12. $17/9 =$ ____ | 25. $25/2 =$ ____ |
| 13. $73/10 =$ ____ | |

Change to an improper number.

- | | |
|-----------------------------|-----------------------------|
| 1. $5 \frac{1}{3} =$ ____ | 14. $2 \frac{2}{3} =$ ____ |
| 2. $2 \frac{3}{5} =$ ____ | 15. $1 \frac{5}{8} =$ ____ |
| 3. $6 \frac{3}{7} =$ ____ | 16. $1 \frac{2}{5} =$ ____ |
| 4. $12 \frac{1}{2} =$ ____ | 17. $2 \frac{1}{4} =$ ____ |
| 5. $10 \frac{1}{4} =$ ____ | 18. $3 \frac{1}{5} =$ ____ |
| 6. $3 \frac{7}{8} =$ ____ | 19. $2 \frac{3}{5} =$ ____ |
| 7. $1 \frac{2}{9} =$ ____ | 20. $3 \frac{1}{9} =$ ____ |
| 8. $3 \frac{3}{4} =$ ____ | 21. $1 \frac{2}{3} =$ ____ |
| 9. $2 \frac{1}{7} =$ ____ | 22. $9 \frac{9}{10} =$ ____ |
| 10. $4 \frac{1}{10} =$ ____ | 23. $3 \frac{1}{2} =$ ____ |
| 11. $1 \frac{3}{4} =$ ____ | 24. $6 \frac{3}{4} =$ ____ |
| 12. $1 \frac{1}{2} =$ ____ | 25. $5 \frac{2}{3} =$ ____ |
| 13. $1 \frac{4}{5} =$ ____ | |

PRETEST C - MULTIPLICATION

Multiply and reduce:

A.

1. $\frac{1}{3} \times \frac{2}{3} = \underline{\hspace{1cm}}$

2. $\frac{2}{5} \times \frac{1}{3} = \underline{\hspace{1cm}}$

3. $\frac{10}{11} \times \frac{2}{3} = \underline{\hspace{1cm}}$

4. $\frac{9}{8} \times \frac{7}{9} = \underline{\hspace{1cm}}$

5. $\frac{4}{5} \times \frac{1}{2} = \underline{\hspace{1cm}}$

6. $\frac{3}{9} \times \frac{1}{11} = \underline{\hspace{1cm}}$

7. $\frac{6}{2} \times \frac{8}{5} = \underline{\hspace{1cm}}$

8. $\frac{5}{15} \times \frac{6}{2} = \underline{\hspace{1cm}}$

9. $\frac{8}{4} \times \frac{8}{2} = \underline{\hspace{1cm}}$

10. $\frac{9}{6} \times \frac{3}{4} = \underline{\hspace{1cm}}$

Do pages 10 and 11. ☐

B.

1. $1 \frac{1}{2} \times \frac{1}{5} = \underline{\hspace{1cm}}$

2. $7 \times 2 \frac{1}{5} = \underline{\hspace{1cm}}$

3. $7 \frac{1}{8} \times \frac{2}{57} = \underline{\hspace{1cm}}$

4. $3 \frac{2}{9} \times \frac{9}{30} = \underline{\hspace{1cm}}$

5. $\frac{1}{2} \times 3 = \underline{\hspace{1cm}}$

6. $3 \frac{1}{4} \times \frac{5}{39} = \underline{\hspace{1cm}}$

7. $2 \frac{1}{4} \times 2 \frac{1}{4} = \underline{\hspace{1cm}}$

8. $4 \frac{2}{3} \times 1 \frac{2}{28} = \underline{\hspace{1cm}}$

9. $4 \times 2 \frac{3}{5} = \underline{\hspace{1cm}}$

10. $7 \frac{3}{5} \times \frac{1}{2} = \underline{\hspace{1cm}}$

Do pages 12 and 13. ☐

MULTIPLYING FRACTIONS: SHORT FORM

Study.

$$\frac{1}{2} \times \frac{3}{4} = \frac{1 \times 3}{2 \times 4}, \text{ or } \frac{3}{8}$$

$$\frac{1}{2} \times \frac{3}{4} = \frac{3}{8} \begin{array}{l} \leftarrow \text{product of numerators} \\ \leftarrow \text{product of denominators} \end{array}$$

Do. Fill in blanks.

$$1. \quad \frac{3}{4} \times \frac{1}{2} = \frac{3 \times 1}{4 \times 2}, \text{ or } \underline{\hspace{2cm}}$$

$$13. \quad \frac{3}{4} \times \frac{3}{5} = \underline{\hspace{2cm}}$$

$$2. \quad \frac{5}{8} \times \frac{3}{4} = \frac{5 \times 3}{8 \times 4}, \text{ or } \underline{\hspace{2cm}}$$

$$14. \quad \frac{1}{3} \times \frac{1}{4} = \underline{\hspace{2cm}}$$

$$3. \quad \frac{2}{3} \times \frac{1}{3} = \frac{2 \times 1}{3 \times 3}, \text{ or } \underline{\hspace{2cm}}$$

$$15. \quad \frac{3}{5} \times \frac{3}{4} = \underline{\hspace{2cm}}$$

$$4. \quad \frac{1}{2} \times \frac{3}{8} = \frac{1 \times 3}{2 \times 8}, \text{ or } \underline{\hspace{2cm}}$$

$$16. \quad \frac{2}{1} \times \frac{2}{15} = \underline{\hspace{2cm}}$$

$$5. \quad \frac{3}{5} \times \frac{1}{2} = \underline{\hspace{2cm}}$$

$$17. \quad \frac{3}{8} \times \frac{1}{5} = \underline{\hspace{2cm}}$$

$$6. \quad \frac{5}{8} \times \frac{3}{4} = \underline{\hspace{2cm}}$$

$$18. \quad \frac{2}{3} \times \frac{2}{3} = \underline{\hspace{2cm}}$$

$$7. \quad \frac{1}{2} \times \frac{1}{x} = \underline{\hspace{2cm}}$$

$$19. \quad \frac{1}{4} \times \frac{3}{4} = \underline{\hspace{2cm}}$$

$$8. \quad \frac{3}{7} \times \frac{3}{x} = \underline{\hspace{2cm}}$$

$$20. \quad \frac{2}{3} \times \frac{1}{7} = \underline{\hspace{2cm}}$$

$$9. \quad \frac{4}{1} \times \frac{1}{5} = \underline{\hspace{2cm}}$$

$$21. \quad \frac{6}{7} \times \frac{3}{5} = \underline{\hspace{2cm}}$$

$$10. \quad \frac{4}{5} \times \frac{1}{3} = \underline{\hspace{2cm}}$$

$$22. \quad \frac{7}{10} \times \frac{3}{5} = \underline{\hspace{2cm}}$$

$$11. \quad \frac{3}{4} \times \frac{1}{8} = \underline{\hspace{2cm}}$$

$$23. \quad \frac{1}{5} \times \frac{1}{6} = \underline{\hspace{2cm}}$$

$$12. \quad \frac{4}{5} \times \frac{2}{3} = \underline{\hspace{2cm}}$$

$$24. \quad \frac{3}{10} \times \frac{1}{1} = \underline{\hspace{2cm}}$$

MULTIPLICATION

Multiply and reduce:

1. $2/5 \times 4/3 = \underline{\hspace{1cm}}$

2. $1/8 \times 2 = \underline{\hspace{1cm}}$

3. $3/7 \times 3/2 = \underline{\hspace{1cm}}$

4. $3/4 \times 5/4 = \underline{\hspace{1cm}}$

5. $3/4 \times 2/3 = \underline{\hspace{1cm}}$

6. $5/6 \times 3/10 = \underline{\hspace{1cm}}$

7. $9/10 \times 10/9 = \underline{\hspace{1cm}}$

8. $13/4 \times 5/13 = \underline{\hspace{1cm}}$

9. $1/2 \times 6 = \underline{\hspace{1cm}}$

10. $1/4 \times 3 = \underline{\hspace{1cm}}$

11. $2/3 \times 4 = \underline{\hspace{1cm}}$

12. $1/2 \times 10 = \underline{\hspace{1cm}}$

13. $4/5 \times 1/2 = \underline{\hspace{1cm}}$

14. $3/8 \times 2/5 = \underline{\hspace{1cm}}$

15. $2/10 \times 5/6 = \underline{\hspace{1cm}}$

16. $3/7 \times 2/5 = \underline{\hspace{1cm}}$

17. $3 \times 2/9 = \underline{\hspace{1cm}}$

18. $5 \times 2/7 = \underline{\hspace{1cm}}$

19. $2 \times 1/2 = \underline{\hspace{1cm}}$

20. $5 \times 3/8 = \underline{\hspace{1cm}}$

21. $1/2 \times 100 = \underline{\hspace{1cm}}$

22. $12 \times 4/3 = \underline{\hspace{1cm}}$

23. $3/5 \times 3/2 = \underline{\hspace{1cm}}$

24. $1/2 \times 1/2 = \underline{\hspace{1cm}}$

25. $1/2 \times 1/3 = \underline{\hspace{1cm}}$

26. $1/3 \times 1/4 = \underline{\hspace{1cm}}$

27. $2/3 \times 0 = \underline{\hspace{1cm}}$

28. $4/5 \times 1/2 = \underline{\hspace{1cm}}$

29. $4 \times 1/6 = \underline{\hspace{1cm}}$

30. $1/5 \times 2/10 = \underline{\hspace{1cm}}$

MULTIPLICATION

Multiply and reduce:

1. $7 \times 1 \frac{1}{2} = \underline{\hspace{2cm}}$

2. $2 \frac{1}{2} \times 1 \frac{1}{4} = \underline{\hspace{2cm}}$

3. $4 \frac{1}{2} \times 1 \frac{2}{3} = \underline{\hspace{2cm}}$

4. $6 \times 2 \frac{1}{3} = \underline{\hspace{2cm}}$

5. $2 \frac{2}{5} \times 1 \frac{1}{2} = \underline{\hspace{2cm}}$

6. $1 \frac{4}{5} \times \frac{6}{7} = \underline{\hspace{2cm}}$

7. $2 \times 4 \frac{1}{3} = \underline{\hspace{2cm}}$

8. $2 \times 3 \frac{1}{2} = \underline{\hspace{2cm}}$

9. $3 \times 2 \frac{1}{3} = \underline{\hspace{2cm}}$

10. $9 \times \frac{1}{4} = \underline{\hspace{2cm}}$

11. $4 \frac{1}{2} \times 1 \frac{2}{3} = \underline{\hspace{2cm}}$

12. $2 \frac{1}{3} \times \frac{1}{5} = \underline{\hspace{2cm}}$

13. $4 \times 2 \frac{2}{3} = \underline{\hspace{2cm}}$

14. $\frac{1}{2} \times 3 \frac{3}{4} = \underline{\hspace{2cm}}$

15. $1 \frac{1}{4} \times 1 \frac{2}{3} = \underline{\hspace{2cm}}$

16. $12 \times \frac{1}{7} = \underline{\hspace{2cm}}$

17. $3 \times \frac{1}{3} = \underline{\hspace{2cm}}$

18. $1 \frac{1}{4} \times 5 = \underline{\hspace{2cm}}$

19. $1 \frac{1}{4} \times \frac{5}{8} = \underline{\hspace{2cm}}$

20. $3 \times 1 \frac{1}{2} = \underline{\hspace{2cm}}$

21. $2 \frac{1}{2} \times \frac{5}{6} = \underline{\hspace{2cm}}$

22. $2 \frac{1}{3} \times 1 \frac{1}{2} = \underline{\hspace{2cm}}$

23. $6 \frac{1}{2} \times 1 \frac{1}{6} = \underline{\hspace{2cm}}$

24. $6 \frac{1}{2} \times 0 = \underline{\hspace{2cm}}$

25. $\frac{3}{4} \times 2 \frac{2}{3} = \underline{\hspace{2cm}}$

26. $3 \frac{1}{2} \times 2 \frac{2}{3} = \underline{\hspace{2cm}}$

27. $1 \frac{1}{2} \times 2 \frac{1}{4} = \underline{\hspace{2cm}}$

28. $4 \frac{1}{2} \times 1 \frac{2}{3} = \underline{\hspace{2cm}}$

29. $2 \frac{1}{2} \times 3 \frac{1}{3} = \underline{\hspace{2cm}}$

30. $2 \times 3 \frac{1}{2} = \underline{\hspace{2cm}}$

31. $2 \frac{3}{4} \times 1 \frac{2}{3} = \underline{\hspace{2cm}}$

32. $\frac{1}{3} \times 9 \frac{1}{4} = \underline{\hspace{2cm}}$

33. $1 \frac{1}{5} \times 2 \frac{1}{2} = \underline{\hspace{2cm}}$

MULTIPLICATION

Multiply:

1. A candy bar weighs $1 \frac{1}{4}$ ounces. John has 5 candy bars. How much do they all weigh together? _____
2. John bought 5 bottles of car paint. Each weighs $1 \frac{3}{4}$ ounces. What is the total weight of the contents? _____
3. A table is $3 \frac{1}{3}$ feet long. We have 4 tables to cover. How much cloth do I need? _____
4. We had 12 apples. John wanted $\frac{2}{3}$ of them. How many did John take? _____
5. Butter costs 78¢ a pound. How much does $\frac{1}{2}$ of a pound cost? _____
6. Each person in Honea Path eats $2 \frac{3}{4}$ pounds of potatoes each week. How many pounds would a family of 4 eat each week? _____
7. A box of fudge weighs $1 \frac{5}{8}$ pounds. How many pounds of fudge are there in 6 boxes? _____
8. Mr. Bobo caught 10 fish. Each fish weighed $1 \frac{1}{2}$ pounds. How many pounds of fish did he catch? _____
9. There are 36 students in Mrs. Roger's class. $\frac{2}{3}$ of the class are boys. The rest of them are girls. How many boys? _____ How many girls? _____

PRETEST D - DIVISION

Divide and reduce.

A.

1. $1/3 \div 1/2 = \underline{\hspace{2cm}}$

2. $2/5 \div 1/2 = \underline{\hspace{2cm}}$

3. $2/6 \div 1/7 = \underline{\hspace{2cm}}$

4. $1/7 \div 2/6 = \underline{\hspace{2cm}}$

5. $7/9 \div 1/9 = \underline{\hspace{2cm}}$

6. $2/9 \div 14/13 = \underline{\hspace{2cm}}$

7. $1/3 \div 1/3 = \underline{\hspace{2cm}}$

8. $3/7 \div 8/9 = \underline{\hspace{2cm}}$

9. $5/12 \div 12/5 = \underline{\hspace{2cm}}$

10. $6/20 \div 10/15 = \underline{\hspace{2cm}}$

Do pages 15 and 16.

☐

B.

1. $2 \frac{1}{3} \div 9/7 = \underline{\hspace{2cm}}$

2. $6 \frac{1}{2} \div 1/2 = \underline{\hspace{2cm}}$

3. $5 \div 1/2 = \underline{\hspace{2cm}}$

4. $1/3 \div 2 = \underline{\hspace{2cm}}$

5. $6 \div 2/3 = \underline{\hspace{2cm}}$

6. $6 \frac{2}{7} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

7. $1/6 \div 6 = \underline{\hspace{2cm}}$

8. $1 \frac{7}{8} \div 15/4 = \underline{\hspace{2cm}}$

9. $1 \frac{1}{2} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

10. $6 \frac{3}{8} \div 2 \frac{1}{2} = \underline{\hspace{2cm}}$

Do pages 17 and 18.

☐

1. To find the quotient of two rational numbers, you find the missing factor. Write the correct quotient in the blank.

$$? \times \frac{3}{8} = 1$$

$$\frac{5}{5} \div \frac{3}{8} = \underline{\hspace{2cm}}$$



2. Write the correct factor in each blank.

$$? \times \frac{3}{5} = 1$$

$$? \times 1 = \frac{5}{8}$$

$$? \times \frac{2}{3} = 0$$

A. $1 \div \frac{3}{5} = \underline{\hspace{2cm}}$

B. $\frac{5}{8} \div 1 = \underline{\hspace{2cm}}$

C. $0 \div \frac{2}{3} = \underline{\hspace{2cm}}$

$$? \times \frac{2}{7} = 1$$

$$? \times \frac{3}{4} = \frac{12}{20}$$

$$? \times \frac{2}{3} = \frac{12}{21}$$

D. $1 \div \frac{2}{7} = \underline{\hspace{2cm}}$

E. $\frac{12}{20} \div \frac{3}{4} = \underline{\hspace{2cm}}$

F. $\frac{12}{21} \div \frac{2}{3} = \underline{\hspace{2cm}}$

G. $1 \div \frac{5}{6} = \underline{\hspace{2cm}}$

H. $0 \div \frac{2}{9} = \underline{\hspace{2cm}}$

I. $\frac{4}{5} \div 1 = \underline{\hspace{2cm}}$

J. $\frac{5}{9} \div \frac{1}{3} = \underline{\hspace{2cm}}$

K. $1 \div \frac{7}{8} = \underline{\hspace{2cm}}$

L. $\frac{3}{4} \div \frac{1}{2} = \underline{\hspace{2cm}}$

M. $\frac{9}{12} \div \frac{3}{4} = \underline{\hspace{2cm}}$

N. $\frac{2}{9} \div 1 = \underline{\hspace{2cm}}$

O. $\frac{7}{15} \div \frac{1}{3} = \underline{\hspace{2cm}}$

P. $\frac{5}{6} \div 1 = \underline{\hspace{2cm}}$

Q. $0 \div \frac{5}{8} = \underline{\hspace{2cm}}$

R. $\frac{24}{27} \div \frac{8}{3} = \underline{\hspace{2cm}}$

S. $\frac{12}{25} \div \frac{4}{5} = \underline{\hspace{2cm}}$

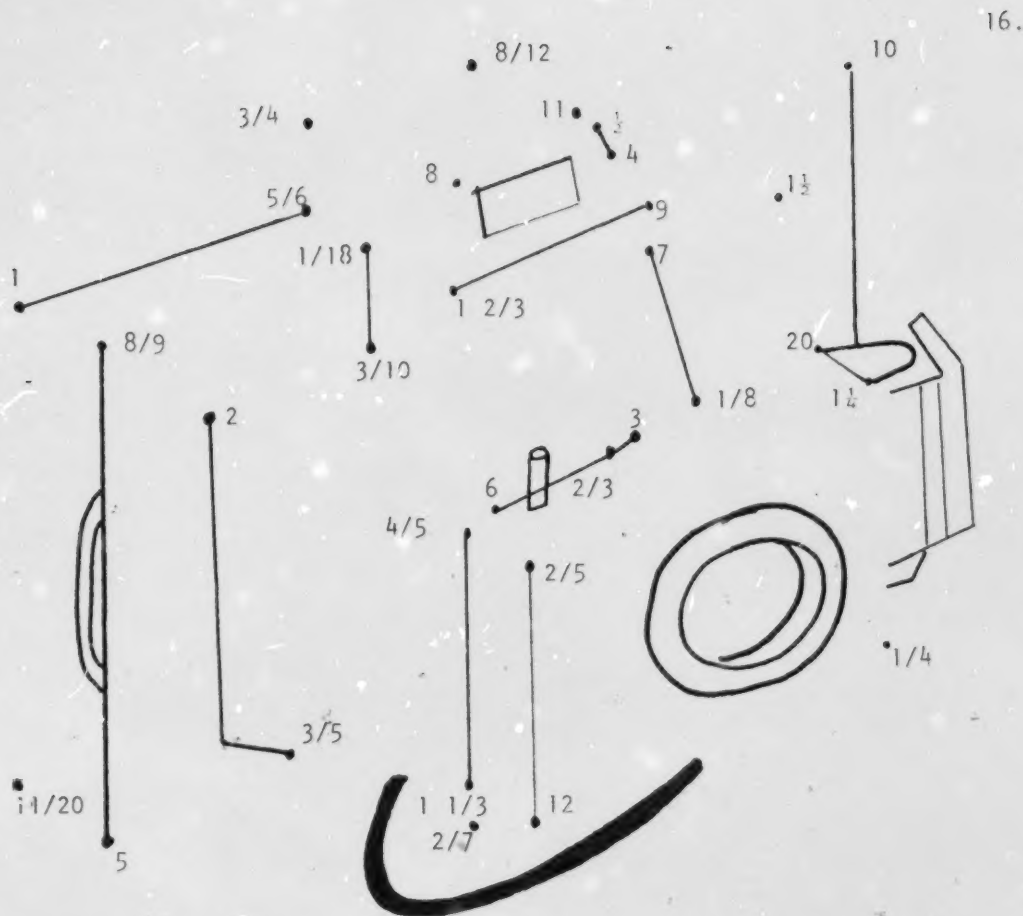
T. $\frac{10}{14} \div \frac{5}{7} = \underline{\hspace{2cm}}$

U. $\frac{24}{26} \div \frac{1}{2} = \underline{\hspace{2cm}}$

V. $\frac{7}{7} \div \frac{3}{8} = \underline{\hspace{2cm}}$

W. $\frac{5}{6} \div \frac{1}{3} = \underline{\hspace{2cm}}$

X. $\frac{8}{8} \div \frac{1}{4} = \underline{\hspace{2cm}}$



Connect the answers in order.

DIVISION

Divide and reduce.

1. $1 \frac{1}{2} \div \frac{2}{3} = \underline{\hspace{2cm}}$

2. $3 \frac{1}{5} \div \frac{1}{4} = \underline{\hspace{2cm}}$

3. $6 \frac{3}{4} \div 2 \frac{1}{2} = \underline{\hspace{2cm}}$

4. $3 \frac{3}{10} \div 2 \frac{1}{10} = \underline{\hspace{2cm}}$

5. $8 \div 4 \frac{1}{4} = \underline{\hspace{2cm}}$

6. $6 \frac{1}{2} \div 8 \frac{1}{3} = \underline{\hspace{2cm}}$

7. $\frac{1}{4} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

8. $6 \frac{1}{2} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

9. $3 \frac{1}{3} \div 2 \frac{1}{4} = \underline{\hspace{2cm}}$

10. $2 \frac{3}{5} \div \frac{3}{4} = \underline{\hspace{2cm}}$

11. $\frac{3}{4} \div 2 \frac{3}{5} = \underline{\hspace{2cm}}$

12. $6 \div 1 \frac{7}{8} = \underline{\hspace{2cm}}$

13. $1 \frac{7}{8} \div 6 = \underline{\hspace{2cm}}$

14. $7 \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

15. $14 \div 3 \frac{1}{3} = \underline{\hspace{2cm}}$

16. $2 \frac{3}{4} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

17. $1 \frac{1}{2} \div 2 \frac{1}{4} = \underline{\hspace{2cm}}$

18. $7 \div 2 \frac{1}{2} = \underline{\hspace{2cm}}$

19. $2 \frac{1}{2} \div 7 = \underline{\hspace{2cm}}$

20. $2 \div \frac{1}{2} = \underline{\hspace{2cm}}$

21. $2 \frac{1}{5} \div 2 \frac{1}{5} = \underline{\hspace{2cm}}$

22. $1 \frac{1}{2} \div \frac{2}{3} = \underline{\hspace{2cm}}$

23. $3 \frac{1}{5} \div \frac{1}{4} = \underline{\hspace{2cm}}$

24. $6 \frac{3}{4} \div 2 \frac{1}{2} = \underline{\hspace{2cm}}$

25. $8 \div 4 \frac{1}{4} = \underline{\hspace{2cm}}$

26. $6 \frac{1}{2} \div 8 \frac{1}{3} = \underline{\hspace{2cm}}$

27. $\frac{1}{4} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

28. $\frac{3}{8} \div 4 \frac{3}{4} = \underline{\hspace{2cm}}$

29. $8 \div 1 \frac{3}{4} = \underline{\hspace{2cm}}$

30. $6 \frac{1}{2} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

31. $3 \frac{1}{3} \div 2 \frac{1}{4} = \underline{\hspace{2cm}}$

32. $2 \frac{3}{5} \div \frac{3}{4} = \underline{\hspace{2cm}}$

33. $\frac{3}{4} \div 2 \frac{3}{5} = \underline{\hspace{2cm}}$

DIVISION

Divide and reduce.

1. $1 \frac{1}{2} \div \frac{1}{2} = \underline{\hspace{2cm}}$

2. $2 \frac{1}{3} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

3. $4 \frac{2}{3} \div 3 \frac{4}{7} = \underline{\hspace{2cm}}$

4. $2 \frac{3}{4} \div 1 \frac{1}{3} = \underline{\hspace{2cm}}$

5. $4 \frac{1}{2} \div 2 \frac{3}{4} = \underline{\hspace{2cm}}$

6. $1 \frac{2}{4} \div 3 \frac{5}{6} = \underline{\hspace{2cm}}$

7. $7 \frac{9}{10} \div \frac{1}{10} = \underline{\hspace{2cm}}$

8. $2 \frac{1}{3} \div 4 \frac{4}{5} = \underline{\hspace{2cm}}$

9. $2 \frac{1}{2} \div \frac{3}{4} = \underline{\hspace{2cm}}$

10. $3 \frac{1}{3} \div \frac{3}{5} = \underline{\hspace{2cm}}$

11. $\frac{7}{8} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

12. $\frac{9}{10} \div 4 \frac{1}{3} = \underline{\hspace{2cm}}$

13. $4 \frac{1}{2} \div 2 \frac{1}{2} = \underline{\hspace{2cm}}$

14. $7 \frac{1}{5} \div 5 \frac{1}{3} = \underline{\hspace{2cm}}$

15. $3 \div \frac{1}{2} = \underline{\hspace{2cm}}$

16. $10 \div \frac{1}{2} = \underline{\hspace{2cm}}$

17. $2 \frac{1}{2} \div \frac{1}{2} = \underline{\hspace{2cm}}$

18. $2 \frac{3}{4} \div \frac{3}{4} = \underline{\hspace{2cm}}$

19. $5 \frac{2}{3} \div \frac{5}{6} = \underline{\hspace{2cm}}$

20. $3 \frac{1}{3} \div \frac{2}{3} = \underline{\hspace{2cm}}$

21. $2 \div \frac{3}{4} = \underline{\hspace{2cm}}$

22. $1 \frac{1}{4} \div \frac{2}{3} = \underline{\hspace{2cm}}$

23. $2 \frac{2}{4} \div \frac{1}{3} = \underline{\hspace{2cm}}$

24. $1 \frac{2}{3} \div \frac{5}{6} = \underline{\hspace{2cm}}$

25. $2 \frac{1}{3} \div \frac{1}{2} = \underline{\hspace{2cm}}$

26. $4 \frac{1}{2} \div \frac{1}{4} = \underline{\hspace{2cm}}$

27. $1 \frac{3}{5} \div \frac{2}{3} = \underline{\hspace{2cm}}$

28. $5 \frac{1}{4} \div \frac{1}{2} = \underline{\hspace{2cm}}$

29. $2 \frac{1}{4} \div \frac{3}{4} = \underline{\hspace{2cm}}$

30. $1 \frac{1}{2} \div 1 \frac{1}{2} = \underline{\hspace{2cm}}$

31. $2 \frac{5}{8} \div 6 = \underline{\hspace{2cm}}$

32. $7 \frac{1}{2} \div 3 = \underline{\hspace{2cm}}$

33. $2 \div 6 \frac{1}{9} = \underline{\hspace{2cm}}$

PRETEST E - ADDITION

Write answer in simplest form.

A.

1. $1/3 + 1/3 = \underline{\hspace{2cm}}$

6. $2\ 1/3 + 2/3 = \underline{\hspace{2cm}}$

2. $1/6 + 2/6 = \underline{\hspace{2cm}}$

7. $4/5 + 2/5 = \underline{\hspace{2cm}}$

3. $1\ 1/5 + 2/5 = \underline{\hspace{2cm}}$

8. $1/3 + 1/3 + 1/3 = \underline{\hspace{2cm}}$

4. $6\ 2/7 + 7\ 2/7 = \underline{\hspace{2cm}}$

9. $6/11 + 2/11 = \underline{\hspace{2cm}}$

5. $2/9 + 7/9 = \underline{\hspace{2cm}}$

10. $12\ 9/12 + 12\ 3/12 = \underline{\hspace{2cm}}$

Do pages 20 and 21.



B.

1. $1/3 + 1/2 = \underline{\hspace{2cm}}$

8. $19\ 1/6 + 21\ 3/8 = \underline{\hspace{2cm}}$

2. $2/5 + 1/6 = \underline{\hspace{2cm}}$

9. $4\ 5/9 + 5/6 = \underline{\hspace{2cm}}$

3. $1/12 + 1/6 = \underline{\hspace{2cm}}$

10. $5/12 + 1/4 = \underline{\hspace{2cm}}$

4. $2/7 + 5/14 = \underline{\hspace{2cm}}$

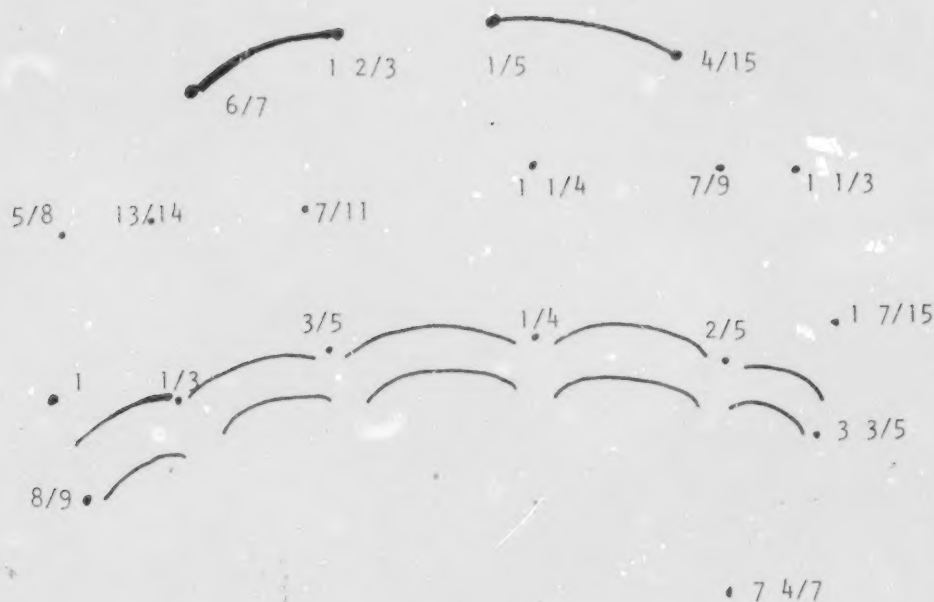
5. $6\ 5/12 + 7\ 1/2 = \underline{\hspace{2cm}}$

6. $1/4 + 3/10 = \underline{\hspace{2cm}}$

7. $9\ 3/10 + 8\ 1/15 = \underline{\hspace{2cm}}$

Do pages 22 and 23.





Connect the answers in order.

1. $1/5 + 3/5 = \underline{\hspace{1cm}}$

2. $1/3 + 1/3 = \underline{\hspace{1cm}}$

3. $4/9 + 4/9 = \underline{\hspace{1cm}}$

4. $1/2 + 1/2 = \underline{\hspace{1cm}}$

5. $3/8 + 2/8 = \underline{\hspace{1cm}}$

6. $4/7 + 2/7 = \underline{\hspace{1cm}}$

7. $6/14 + 7/14 = \underline{\hspace{1cm}}$

8. $1/6 + 1/6 = \underline{\hspace{1cm}}$

9. $3/4 + 3/4 = \underline{\hspace{1cm}}$

10. $5/12 + 1/12 = \underline{\hspace{1cm}}$

11. $3/10 + 3/10 = \underline{\hspace{1cm}}$

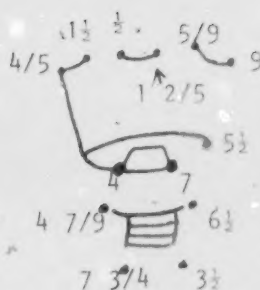
12. $5/11 + 2/11 = \underline{\hspace{1cm}}$

13. $5/6 + 5/6 = \underline{\hspace{1cm}}$

14. $1/15 + 2/15 = \underline{\hspace{1cm}}$

15. $3/8 + 7/8 = \underline{\hspace{1cm}}$

16. $1/16 + 3/16 = \underline{\hspace{1cm}}$



17. $4/5 + 3/5 = \underline{\hspace{1cm}}$

18. $1/9 + 4/9 = \underline{\hspace{1cm}}$

19. $3/20 + 5/20 = \underline{\hspace{1cm}}$

20. $7/18 + 7/18 = \underline{\hspace{1cm}}$

21. $1/30 + 7/30 = \underline{\hspace{1cm}}$

22. $5/12 + 11/12 = \underline{\hspace{1cm}}$

23. $14/15 + 8/15 = \underline{\hspace{1cm}}$

24. $1 2/5 + 2 1/5 = \underline{\hspace{1cm}}$

25. $4 2/7 + 3 2/7 = \underline{\hspace{1cm}}$

26. $5 1/2 + 3 1/2 = \underline{\hspace{1cm}}$

27. $2 1/4 + 3 1/4 = \underline{\hspace{1cm}}$

28. $4 5/6 + 2 1/6 = \underline{\hspace{1cm}}$

29. $4 3/4 + 1 3/4 = \underline{\hspace{1cm}}$

30. $1 5/8 + 1 7/8 = \underline{\hspace{1cm}}$

31. $2 3/4 + 5 = \underline{\hspace{1cm}}$

32. $3 7/9 + 1 = \underline{\hspace{1cm}}$

33. $2 6/7 + 1 1/7 = \underline{\hspace{1cm}}$

Complete each addition sentence.

$$1. \frac{2}{3} + \frac{5}{3} = \frac{+5}{3} = \underline{\quad}$$

$$5. \frac{3}{10} + \frac{6}{10} = \frac{+6}{10} = \underline{\quad}$$

$$2. \frac{3}{5} + \frac{7}{5} = \frac{3+}{5} = \underline{\quad}$$

$$6. \frac{5}{8} + \frac{7}{8} = \frac{+7}{8} = \underline{\quad}$$

$$3. \frac{3}{8} + \frac{2}{8} = \frac{+}{8} = \underline{\quad}$$

$$7. \frac{1}{2} + \frac{5}{2} = \frac{+}{2} = \underline{\quad}$$

$$4. \frac{3}{4} + \frac{7}{4} = \frac{3+}{4} = \underline{\quad}$$

$$8. \frac{7}{10} + \frac{11}{10} = \frac{+}{10} = \underline{\quad}$$

Add:

$$1. \frac{3}{4} + \frac{5}{4} = \underline{\quad}$$

$$5. \frac{7}{8} + \frac{3}{8} = \underline{\quad}$$

$$9. \frac{5}{11} + \frac{6}{11} = \underline{\quad}$$

$$2. \frac{5}{8} + \frac{7}{8} = \underline{\quad}$$

$$6. \frac{3}{5} + \frac{7}{5} = \underline{\quad}$$

$$10. \frac{8}{15} + \frac{3}{15} = \underline{\quad}$$

$$3. \frac{3}{5} + \frac{5}{5} = \underline{\quad}$$

$$7. \frac{11}{7} + \frac{15}{7} = \underline{\quad}$$

$$11. \frac{3}{20} + \frac{7}{20} = \underline{\quad}$$

$$4. \frac{1}{11} + \frac{2}{11} = \underline{\quad}$$

$$8. \frac{3}{10} + \frac{7}{10} = \underline{\quad}$$

$$12. \frac{5}{25} + \frac{20}{25} = \underline{\quad}$$

Add:

$$1. \frac{3}{8} + \frac{5}{8} = \underline{\quad}$$

$$5. \frac{1}{5} + \frac{7}{5} = \underline{\quad}$$

$$2. \frac{2}{11} + \frac{5}{11} = \underline{\quad}$$

$$6. \frac{4}{10} + \frac{6}{10} = \underline{\quad}$$

$$3. \frac{3}{8} + \frac{7}{8} = \underline{\quad}$$

$$7. \frac{2}{10} + \frac{7}{10} = \underline{\quad}$$

$$4. \frac{1}{9} + \frac{3}{9} = \underline{\quad}$$

$$8. \frac{3}{7} + \frac{2}{7} = \underline{\quad}$$

Add. Then express your answer as an equivalent fraction in lowest terms.

Example: $\frac{5}{6} + \frac{3}{6} = \frac{8}{6} = \frac{4}{3}$

$$1. \frac{1}{6} + \frac{2}{6} = \underline{\quad} = \underline{\quad}$$

$$5. \frac{3}{8} + \frac{7}{8} = \underline{\quad} = \underline{\quad}$$

$$2. \frac{3}{10} + \frac{7}{10} = \underline{\quad} = \underline{\quad}$$

$$7. \frac{5}{7} + \frac{9}{7} = \underline{\quad} = \underline{\quad}$$

$$3. \frac{4}{7} + \frac{3}{7} = \underline{\quad} = \underline{\quad}$$

$$9. \frac{2}{10} + \frac{5}{10} = \underline{\quad} = \underline{\quad}$$

$$4. \frac{8}{10} + \frac{4}{10} = \underline{\quad} = \underline{\quad}$$

$$11. \frac{3}{25} + \frac{7}{25} = \underline{\quad} = \underline{\quad}$$

$$5. \frac{3}{8} + \frac{4}{8} = \underline{\quad} = \underline{\quad}$$

$$12. \frac{7}{15} + \frac{3}{15} = \underline{\quad} = \underline{\quad}$$

ADDING FRACTIONAL PARTS

Complete these charts, using a ruler. Answers should be in reduced form.

+	$1/8$	$1/4$	$3/8$	$1/2$	$5/8$	$3/4$	$7/8$	1
$1/8$	$1/4$							
$2/8$		$1/2$						
$3/8$			$3/4$					
$4/8$				1				
$5/8$					$1\ 1/4$			
$6/8$						$1\ 1/2$		
$7/8$							$1\ 3/4$	
$8/8$								2

$1/2$							$1\ 5/16$	
$1/4$								
$1/8$								
$1/16$								
+	$1/16$	$3/16$	$5/16$	$7/16$	$9/16$	$11/16$		$15/16$

ADDITION OF FRACTIONS

Martin Luther King was a famous:

$\overline{13}$ $\overline{5}$ $\overline{6}$ $\overline{5}$ $\overline{23}$ $\overline{11}$ $\overline{5}$ $\overline{3}$ $\overline{4}$ $\overline{7}$ $\overline{8}$ $\overline{23}$ $\overline{12}$ $\overline{2}$ $\overline{10}$ $\overline{12}$ $\overline{11}$

Solve the problems. Find the number that each letter represents. Fill in the blank with the letters each number represents.

1. $1/3 + 1/6 = 1/A$

2. $1/2 + 1/4 = 3/H$

3. $1/8 + 3/4 = 7/S$

4. $1/4 + 1/6 = I/12$

5. $2/5 + 3/10 = 7/D$

6. $2/9 + 1/6 = T/18$

7. $5/12 + 1/2 = 11/E$

8. $1/6 + 3/8 = C/24$

9. $1/4 + 3/10 = R/20$

10. $5/12 + 1/4 = 2/G$

11. $1/6 + 3/5 = L/30$

12. $3/10 + 8/15 = 5/V$

PRETEST F - SUBTRACTION - FRACTIONS

Reduce answers:

A.

$$\begin{array}{r} 1. \quad 5/6 \\ - \quad 1/6 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 5/7 \\ - \quad 3/7 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 9 \frac{3}{4} \\ - \quad 5 \frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 25/48 \\ - \quad 1/48 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 13 \frac{10}{7} \\ - \quad 9 \frac{9}{7} \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 3 \frac{1}{5} \\ - \quad 2 \frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 8/9 \\ - \quad 1/9 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 7/8 \\ - \quad 3/8 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 6/7 \\ - \quad 2/7 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 9 \frac{8}{21} \\ - \quad 1 \frac{1}{21} \\ \hline \end{array}$$



Do pages 25 and 26.

B.

$$\begin{array}{r} 1. \quad 1/4 \\ - \quad 1/8 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 2 \frac{1}{2} \\ - \quad 1/6 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 7 \frac{3}{4} \\ - \quad 5 \frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 1/2 \\ - \quad 1/3 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 5/6 \\ - \quad 4/9 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 3/4 \\ - \quad 3/5 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 1/13 \\ - \quad 1/39 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 10 \frac{3}{4} \\ - \quad 2 \frac{5}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 9/20 \\ - \quad 3/25 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 5/7 \\ - \quad 1/2 \\ \hline \end{array}$$



Do pages 27 and 28.

C.

$$\begin{array}{r} 1. \quad 6 \\ - \quad 1/3 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 5 \\ - \quad 2/9 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 4 \\ - \quad 11/12 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 6 \frac{1}{9} \\ - \quad 8/9 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 3 \frac{3}{8} \\ - \quad 2 \frac{6}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 4 \frac{4}{20} \\ - \quad 9/20 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 7 \frac{3}{5} \\ - \quad 1 \frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 1 \frac{2}{9} \\ - \quad 2/3 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 2 \frac{2}{4} \\ - \quad 7/8 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 14 \frac{1}{4} \\ - \quad 7/8 \\ \hline \end{array}$$



Do pages 29 and 30.

SUBTRACTION OF FRACTIONS

$\frac{3}{4}$

$\frac{1}{7}$

$\frac{1}{4}$

$\frac{4}{5}$

$\frac{1}{2}$

$\frac{2}{3}$

$\frac{1}{3}$

$\frac{1}{11}$

1

$\frac{3}{5}$

Connect "a" and "b" answers for each problem. Then cut along the outside lines of the figure formed, fold along the inside lines, and tape the figure together to form a cube.

(a)

(b)

1. $\frac{2}{3} - \frac{1}{3} =$

$\frac{5}{11} - \frac{4}{11} =$

2. $\frac{4}{7} - \frac{3}{7} =$

$\frac{4}{5} - \frac{1}{5} =$

3. $\frac{3}{4} - \frac{1}{4} =$

$\frac{7}{9} - \frac{1}{9} =$

4. $\frac{3}{2} - \frac{1}{2} =$

$\frac{9}{10} - \frac{3}{10} =$

5. $\frac{11}{16} - \frac{3}{16} =$

$\frac{5}{8} - \frac{3}{8} =$

6. $\frac{13}{14} - \frac{11}{14} =$

$\frac{11}{12} - \frac{2}{12} =$

7. $\frac{5}{6} - \frac{1}{6} =$

$\frac{14}{15} - \frac{2}{15} =$

8. $\frac{17}{20} - \frac{12}{20} =$

$\frac{23}{25} - \frac{3}{25} =$

9. $\frac{9}{7} - \frac{2}{7} =$

$\frac{23}{24} - \frac{5}{24} =$

SUBTRACTION

$$\begin{array}{r} 1. \quad 3/4 \\ - 1/4 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 5/8 \\ - 1/8 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 3/7 \\ - 2/7 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 5/9 \\ - 1/9 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 2 \frac{3}{4} \\ - 1/4 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 3 \frac{1}{8} \\ - 1/8 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 6 \frac{5}{8} \\ - 4/8 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 7 \frac{3}{4} \\ - 5 \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 3/4 \\ - 2/4 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 1 \frac{5}{8} \\ - 3/8 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 2 \frac{1}{8} \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 6 \frac{1}{4} \\ - 5 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 4 \frac{2}{3} \\ - 1 \frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 19 \frac{15}{16} \\ - 4 \frac{5}{16} \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 14 \frac{4}{8} \\ - 2 \frac{3}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 9 \frac{7}{8} \\ - 4 \frac{1}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 55 \frac{2}{3} \\ - 24 \frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 2 \frac{10}{12} \\ - 1 \frac{4}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 3 \frac{5}{8} \\ - 2 \frac{4}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 3 \frac{10}{12} \\ - 1 \frac{5}{12} \\ \hline \end{array}$$

SUBTRACTION OF FRACTIONS

KNOCK! KNOCK!

WHO'S THERE?

$$\overline{36} \overline{50} \overline{1} \overline{19} \overline{6} \overline{18} \quad !$$

$$\overline{36} \overline{50} \overline{1} \overline{19} \overline{6} \overline{18} \quad \overline{8} \overline{2} \overline{15} \quad ?$$

$$\overline{36} \overline{50} \overline{1} \overline{19} \overline{6} \overline{18} \quad \overline{22} \overline{50} \overline{1} \overline{3} \overline{5} \quad !$$

$$\overline{8} \overline{2} \overline{15} \quad \overline{28} \overline{18} \quad \overline{22} \overline{2} \overline{12} \quad \overline{40} \overline{28} \overline{1} \overline{24} \quad \overline{30} \overline{12} \overline{2} \overline{28} \overline{13} \overline{3} \quad \overline{5} \overline{15} \overline{6} \quad ?$$

$$\overline{50} \overline{3} \overline{50} \quad !$$

$$\overline{50} \overline{3} \overline{50} \quad \overline{8} \overline{2} \overline{15} \quad ?$$

$$\overline{50} \overline{3} \overline{50} \quad \overline{40} \overline{15} \overline{15} \overline{3} \overline{24} \overline{6} \overline{13} \overline{48} \overline{2} \quad !$$

Solve the problems. Find the number that each letter represents. Fill in the blanks with the letters each number represents.

1. $\frac{5}{6} - \frac{1}{6} = H/3$

2. $\frac{2}{3} - \frac{1}{2} = 1/U$

3. $\frac{3}{4} - \frac{2}{3} = R/12$

4. $\frac{4}{5} - \frac{2}{3} = 2/O$

5. $\frac{5}{6} - \frac{1}{4} = 7/E$

6. $\frac{1}{2} - \frac{1}{8} = 3/W$

7. $\frac{2}{3} - \frac{3}{7} = Y/21$

8. $\frac{5}{6} - \frac{5}{9} = 5/S$

9. $\frac{1}{2} - \frac{3}{11} = 5/T$

10. $\frac{7}{8} - \frac{5}{6} = 1/L$

11. $\frac{3}{4} - \frac{2}{9} = K/36$

12. $\frac{3}{7} - \frac{1}{4} = 5/I$

13. $\frac{3}{4} - \frac{5}{12} = 1/D$

14. $\frac{3}{5} - \frac{1}{6} = N/30$

15. $\frac{19}{25} - \frac{7}{10} = 3/A$

16. $\frac{5}{8} - \frac{3}{20} = 19/G$

17. $\frac{11}{12} - \frac{4}{9} = 17/M$

18. $\frac{9}{10} - \frac{7}{15} = 13/B$

19. $\frac{7}{16} - \frac{1}{6} = 13/C$

SUBTRACTION OF FRACTIONS

A winner of two Nobel Prizes:

$\overline{19} \overline{6} \overline{11} \overline{4} \overline{13} \quad \overline{1} \overline{7} \overline{10} \overline{24} \overline{17} \overline{24} \overline{18} \overline{1} \overline{7} \overline{6} \quad \overline{5} \overline{3} \overline{11} \overline{4} \overline{13}$

Solve the problems. Find the number that each letter represents. Fill in the blank with the letters each number represents.

1. $4/5 - 1/2 = 3/L$
2. $2/9 - 1/6 = 1/W$
3. $5/12 - 1/4 = 1/A$
4. $7/8 - 1/6 = D/24$
5. $9/10 - 7/15 = E/30$
6. $11/18 - 5/12 = K/36$
7. $9/20 - 4/15 = R/60$
8. $10 \frac{4}{5} - 4 \frac{7}{15} = 6 \frac{1}{U}$
9. $9 \frac{2}{3} - 3 \frac{5}{8} = 6 \frac{S}{24}$
10. $2 \frac{14}{25} - 1 \frac{2}{5} = 1 \frac{I}{25}$
11. $3 \frac{7}{12} - 2 \frac{3}{8} = 1 \frac{5}{O}$
12. $4 \frac{1}{6} - 2 \frac{3}{8} = 1 \frac{M}{24}$
13. $8 \frac{1}{2} - 5 \frac{2}{3} = 2 \frac{C}{6}$

SUBTRACTION WITH BORROWING

$$\begin{array}{r} 1. \quad 4 \frac{2}{5} \\ - 2 \frac{3}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 7 \frac{3}{10} \\ - 2 \frac{9}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 23 \frac{1}{4} \\ - 14 \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 5 \frac{1}{5} \\ - 4 \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 6 \frac{3}{4} \\ - 5 \frac{4}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 10 \\ - \frac{5}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 3 \\ - \frac{4}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 5 \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 124 \\ - \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 63 \\ - \frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 26 \frac{1}{6} \\ - 5 \frac{3}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 17 \frac{5}{12} \\ - 2 \frac{6}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 3 \frac{1}{5} \\ - 2 \frac{2}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 28 \frac{1}{2} \\ - 5 \frac{5}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 48 \frac{1}{16} \\ - 12 \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 54 \frac{1}{3} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 13 \frac{1}{4} \\ - 7 \frac{5}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 15 \frac{2}{5} \\ - 9 \frac{4}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 9 \frac{4}{9} \\ - 8 \frac{8}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 9 \frac{1}{2} \\ - 5 \frac{5}{8} \\ \hline \end{array}$$

SUBTRACTION WITH BORROWING

$$\begin{array}{r} 1. \quad 11 \frac{1}{5} \\ - 6 \frac{7}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 14 \frac{1}{6} \\ - 8 \frac{4}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 7 \frac{3}{7} \\ - 1 \frac{6}{7} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 12 \frac{3}{8} \\ - 3 \frac{5}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 1 \frac{4}{10} \\ - 7/10 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 6 \frac{3}{10} \\ - 5 \frac{8}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 6 \frac{1}{2} \\ - 3/4 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 64 \frac{1}{3} \\ - 32 \frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 4 \frac{1}{4} \\ - 1 \frac{7}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 12 \frac{3}{5} \\ - 7/10 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 97 \frac{1}{2} \\ - 90 \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 6 \frac{1}{4} \\ - 1/3 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 6 \frac{1}{8} \\ - 7/8 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 1 \frac{1}{8} \\ - 5/8 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 2 \frac{1}{4} \\ - 3/8 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 19 \frac{3}{8} \\ - 13 \frac{9}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 2 \frac{1}{6} \\ - 1 \frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 19 \frac{4}{12} \\ - 4 \frac{3}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 6 \frac{1}{6} \\ - 3 \frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 10 \frac{1}{6} \\ - 4 \frac{1}{3} \\ \hline \end{array}$$

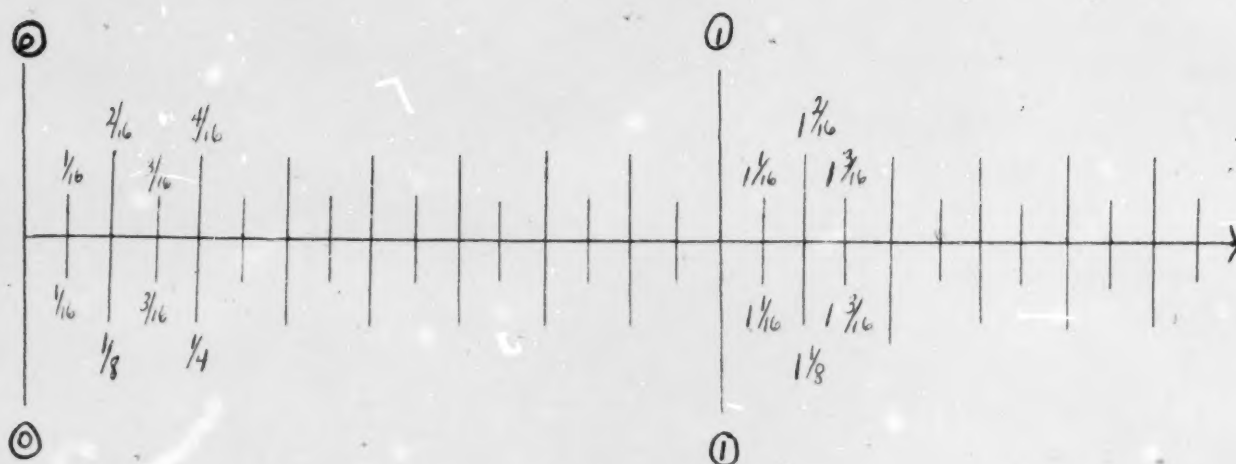
PRETEST G - FRACTIONS

Which fraction is largest?

1. $2/5$, $4/5$
2. $1/6$, $3/6$
3. $3/12$, $5/12$
4. $7/7$, $4/7$, $7/7$
5. $1/3$, $3/6$, $4/9$
6. $3/6$, $5/12$, $1/3$
7. $5/6$, $2/3$, $2/9$
8. $1/4$, $5/10$, $2/5$
9. $4/12$, $5/6$, $3/4$
10. $15/12$, $1\ 1/4$, $1\ 1/6$
11. $4\ 1/2$, $9/2$, $18/4$
12. $3\ 1/2$, $6\ 1/4$, $6\ 2/6$
13. $1\ 1/8$, $1\ 2/4$, $1\ 3/16$
14. $2\ 2/3$, $2\ 5/9$, $2\ 4/18$
15. $1/7$, $3/6$, $7/7$
16. $1\ 5/10$, $1\ 5/5$, $1\ 1/4$



Complete chart with proper fractions:



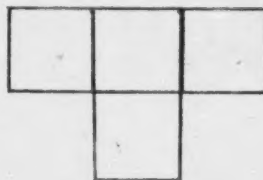
Arrange the following fractions in order from smallest to largest.

Example: $\frac{1}{4}$ and $\frac{1}{3} = \frac{3}{12}, \frac{4}{12}$
 $\frac{3}{4}$ and $\frac{4}{5} = \frac{15}{20}, \frac{16}{20}$

1. $\frac{1}{4}$ and $\frac{1}{6}$
2. $\frac{3}{2}$ and $\frac{4}{3}$
3. $\frac{5}{6}$ and $\frac{7}{8}$
4. $\frac{7}{12}$ and $\frac{5}{8}$
5. $\frac{3}{4}$ and $\frac{7}{10}$
6. $\frac{4}{7}$ and $\frac{3}{5}$
7. $\frac{7}{8}$ and $\frac{11}{12}$
8. $\frac{12}{5}$ and $\frac{7}{3}$
9. $\frac{7}{20}$ and $\frac{4}{15}$
10. $\frac{5}{3}$ and $\frac{7}{4}$

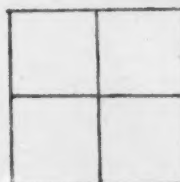
FRACTIONS

A. Puzzler-Draw this figure.



1. Erase one line segment and leave three squares of the same size.

2. Draw this figure.



Rearrange three line segments to make three squares of the same size.

B. Extra for experts: Arrange these fractions in order from largest to smallest.

1. $\frac{2}{3}$, $\frac{5}{6}$, $\frac{3}{4}$

2. $\frac{5}{8}$, $\frac{3}{5}$, $\frac{7}{10}$

3. $\frac{4}{5}$, $\frac{2}{5}$, $\frac{5}{6}$

4. $\frac{3}{8}$, $\frac{4}{6}$, $\frac{5}{12}$

5. $\frac{6}{7}$, $\frac{5}{6}$, $\frac{1}{3}$

6. $\frac{3}{9}$, $\frac{10}{27}$, $\frac{4}{9}$